

NEW SERIES.]

JULY, 1873.

[VOL. 1, NO. 1.

OUT WEST

A MONTHLY MAGAZINE

OF

ORIGINAL AND SELECTED ARTICLES,

BEARING PRINCIPALLY ON THE

ROCKY MOUNTAIN SECTION,

WITH A SUMMARY OF NEWS.

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COLORADO SPRINGS, COLORADO,

"OUT WEST" PRINTING AND PUBLISHING COMPANY.

PROSPECTUS.

OUT WEST aims to be the Magazine of the *Rocky Mountain Section*, and of Colorado especially, as its prominent representative.

Nature has marked out this Section by many peculiarities (geographical, topographical, climatic, etc.,) as a distinct one, and it seems appropriate that it should have a magazine distinctly its own.

For such a publication it will yield abundant topics of interest, for it is a wide field in which to reap, and (to the rest of the world) comparatively an unknown one.

Its physical characteristics alone—its Peaks and Parks and Passes, its Glens and Cañons, its Groves and Forests, its Lakes and Streams and Waterfalls, its Table-lands and its Valleys, its sweeping Plains—might furnish themes for almost endless description.

The researches of topographers, geologists, mineralogists, botanists, and other scientists, are daily unfolding new wonders, the full record of which would require many volumes.

The deeds of daring, the privations and the sufferings of Pioneers in the not far distant Past; the customs and the folklore of the red men who have so long held this vast region for their own, but who are so rapidly disappearing before the on-coming flood of Civilization; the struggles between the old inhabitants and the new; these and kindred subjects can furnish many a thrilling and romantic chapter.

The evidences of an ancient civilization—though scanty as yet—give promise that ere long, the history of a still older race will await the chronicler.

These subjects it is intended shall all find a place, from time to time, in the pages of **OUT WEST**.

The Past, however, must, to a great extent, give way to the Present.

The white man has come to take the place of the red man, and is stamping the super-scription of his kingship on the face of the land. The scream of his locomotive wakes the echoes which a while ago multiplied the war-whoops of the savage. He has turned the fruitful waters upon the Valleys and Plains over which the Indian so lately hunted and fought, and has made their barren wastes to "smile with fields of wavy corn." He has built Churches and Schools and Business Blocks where, but a few years since, the squaws put up the wigwags for their braves. His sheep and cattle are feeding on the range of the antelope and the buffalo. His mining camps are driving the bear and the panther from their lairs in the mountains. And day by day the old order of things is giving place more and more to the new; the Stone has been thrown into the water, and the circles are spreading outwards with continually widening reach.

To present a reflex of this progress of Civilization in its various branches, will be a chief part of our purpose, and to help it forward, to some extent, will not be beyond our ambition.

In brief, it will be sought to make **OUT WEST** such that anyone reading it will gain a full and accurate idea of the Rocky Mountain Section in all its phases—its geography, topography, scenery and climate, its resources, its capabilities, and its wants, its industries and enterprises, its associations and prospects.

To this end, the Editor has already secured the assistance of several contributors, who are prominently identified with the Rocky Mountain Section, and who are eminently fitted, by experience or study, to furnish contributions of interest and value. He trusts that many others, similarly qualified, will be induced to give their aid, and he commends the enterprise to their good will.

Free use will be made of articles of value appearing in other publications, and these Selected Articles, thus brought together from various sources, will, it is believed, be one of the most valuable features of the Magazine.

A short Summary of News will also be published each month. In this, the aim will not be to present a complete chronicle of events, but rather to give a selection of such items of news as will be a fair index of what is going on.

Whilst **OUT WEST** has been made sufficiently large to afford ample space for these various features, it has been thought well to keep it, for the present, within comparatively narrow limits, it being preferable that it should "grow up with the country" rather than that it should start out on too ambitious a scale, only to afford one more example of the rule that "pride goes before a fall."

J. E. LILLER, Editor.

Terms of Subscription Three Dollars per Annum.

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A N apology is due to the subscribers to OUT WEST, for the delay in the commencement of the New Series. It was intended to begin it with the beginning of the year, but, owing to the miscarriage of an order, the type and other necessary material did not reach Colorado until two or three months of the year had slipped away. It was then thought best to defer the commencement of the volume until the beginning of the second half of the year.

Second.—Because the Winter Pasturage is good and nutritious.

Third.—Because the snows are usually light.

For these reasons, Sheep can be kept in large flocks without injury—a great economy to the wool-grower; and Stock, when acclimated, can be grazed the year round on the natural pasturage, and need not be kept up or artificially sheltered during any part of the Winter.

The above advantages are caused by the *dryness of the climate*. Were it not for that, this would not be a good stock country, for, if the atmosphere were impregnated with moisture, the Winters would be too cold for stock to withstand them without artificial shelter; and the grass,

Stock-Raiser to, at most, three hundred and twenty acres. How is he to carry on his occupation?

Unable, of course, to exist on a range of such limits, he "prospects" the frontier in every direction, until he finds a spot either sufficiently remote from other settlements, or so exceptionally situated as to water privileges, as to give him control of an extensive range of unoccupied public land. There, he settles down to a hermit's life; and, if the Indians, as well as all other species of the *genus homo*, leave him undisturbed in his solitude, his lot as a Stockman may be considered an enviable one. This, however, is not to be expected in so rapidly advancing a Territory as Colorado. First one man comes and

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All who know this country are aware that, exclusive of the actual mountains themselves and the very small area of pine-covered land, at least nineteen-twentieths of the entire surface consists of grazing land, admirably adapted for that, but adapted for nothing else.

It is a good stock country chiefly for the following reasons:

First.—Because it is healthy for Stock.

Second.—Because the Winter Pasturage is good and nutritious.

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For these reasons, Sheep can be kept in large flocks without injury—a great economy to the wool-grower; and Stock, when acclimated, can be grazed the year round on the natural pasturage, and need not be kept up or artificially sheltered during any part of the Winter.

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unless cut and made into hay, would be unnutritious and almost worthless for food.

This dryness of climate, however, causes the pasturage to be thin. Although of the best quality, the grass is very light, so that, acre per acre, this section is capable of sustaining much fewer cattle than a well-watered country. And to this fact we wish to call special attention, as having an important bearing on the subject which we are now considering. The experience of Stockmen, even in sections of Colorado which are above the average of the Territory, proves that a range of five thousand acres is barely sufficient to support three hundred head of cattle, or a thousand sheep. In other words, a sheep requires five acres of good average Colorado grazing land for its support the year round. This deduction is drawn from fact, not from theory; and we believe that, if anything, we are overstating the capabilities of our grazing land.

Now, let it be borne in mind that the Pre-emption and Homestead Laws are in full force here, and that they limit the possessions of the Stock-Raiser to, at most, three hundred and twenty acres. How is he to carry on his occupation?

Unable, of course, to exist on a range of such limits, he "prospects" the frontier in every direction, until he finds a spot either sufficiently remote from other settlements, or so exceptionally situated as to water privileges, as to give him control of an extensive range of unoccupied public land. There, he settles down to a hermit's life; and, if the Indians, as well as all other species of the *genus homo*, leave him undisturbed in his solitude, his lot as a Stockman may be considered an enviable one. This, however, is not to be expected in so rapidly advancing a Territory as Colorado. First one man comes and

divides his range with him just as his stock have increased sufficiently to require it all. Then two or three more settlers arrive and squat upon the patches of hay-land scattered here and there over his range—patches, which, as years have gone by and his pasturage has become limited, he has cut with increasing regularity and has valued more and more highly. At length, crowded out, he decamps to seek other fields, and happy is he if, in their unaccustomed pastures, the bulk of his stock will remain with him, and if, after years of toil, he is able to retain anything like a large remnant of the increase he has brought up and cherished.

Nor are these all the difficulties which the breeder of horned-cattle has to contend against, as a grazier on the Public Domain. If he wish to improve his stock, he finds that his efforts are continually thwarted. As he does not own the land, he cannot fence it; the bad stock belonging to his neighbors run with his own; his improved bulls—imported, probably, at great expense—roam promiscuously amongst the nondescript cattle, which, under existing conditions, are destined for ever to disgrace the country. For such reasons, Texan cattle have become bye-words of badness, and all attempts to breed good stock have been abandoned. Texas, however, is so prolific of stock that it may be profitably made use of as the hot-bed for raising inferior beef. Let quantity, not quality, rule the markets there. Colorado, however, can never compete with Texas in quantity; it is, therefore, of the highest importance that care should be taken to insure her superiority in quality. To effect this, it is absolutely necessary that everybody's cattle should not roam at large over the endless acres of no man's land.

The Wool-Grower is in an equally bad plight, though in a different way. His flocks require careful watching all day and every day; labor is very expensive; and half the profits of the herdsman go in wages, because he cannot follow the invariable practice of Wool-Growers in every other sheep country in the world except this—namely, fence in a large tract of land. The Wool-Grower of the West is entirely at the mercy of the authorities at Washington; remove the protective tariff on wool, and he is ruined. Not because sheep do worse here than elsewhere; not

even because labor is high here, for it is almost as high in Australia and New Zealand; but because in this wide land he cannot raise sheep in accordance with the recognized laws of economy; he cannot fence in a sufficient range for his sheep, and so dispense with the use of unnecessary herders.

But, says the persistent admirer of our American Institutions, are there not "offered lands" in abundance lying idle; what is to prevent him buying any number of square miles that he may think necessary?

All we need say is: "Let him try." We will suppose that he has a thousand sheep, and that he can find five thousand acres of offered land in which the choice patches of hay land and the one or two tempting springs still remain unmonopolized by the multipliers of mongrel calves and uneatable mutton. Although possessed of but a thousand sheep—a number only sufficient to provide a bare subsistence for his wife and family, he must be quite a capitalist to pay down \$6,250 for the land, in addition to the \$3,500 necessary to be expended in fencing it. But let us suppose further that he is able to meet this expenditure. Then, if he happen to live in some parts of the Territory which might be mentioned, the Assessor will come round, will value his land at \$2 per acre, and charge him three per cent. yearly on that, for the privilege of Wool-growing on right principles. We have supposed a case; we are not likely to find one in reality, for, if a Wool-Grower count the cost of securing to himself a sufficiently large tract of land, he will never attempt it, as taxes alone—not counting those on improvements—will reach thirty cents per annum on the pasture necessary for a single sheep.

The inevitable conclusion to be drawn from the above considerations is that the Pre-emption and Homestead Laws, admirable as they are when applied to an agricultural country—and such is the whole of the United States East of the ninety-ninth meridian—are as unsuited to a Pastoral Country as they are to a Mining District. Their unfitness in the latter case has been acknowledged, and separate Land Laws have been provided. In like manner, distinct laws must regulate land tenure in the former case, if Stock

Raising is to be fostered and to prosper in the West.

A dollar-and-a-quarter per acre is far too high a price to pay to Government for Pasture Lands; let the price be reduced to twenty-five cents. There is ample precedent for this, for such a reduction was made in South-Western Missouri after the war, although the land was as well adapted to Agriculture as to Stock Raising.

Next, let the vexatious limit of a hundred and sixty acres—an area absolutely useless for a Stock Range—be extended to, say, five square miles. Let this be the Government limit of the largest purchasable Stock Range.

Lastly, let a responsible Committee be attached to the Land Offices in each Western State and Territory, to declare what districts shall be sub-

ject to the Stock Range Laws, and what, as Agricultural or Mining Land, shall be exempted therefrom.

It is more than probable that, under the working of such a system, all these Plains, over which the Buffalo now roam at large, and where hostile Indian tribes find a secure haven, would become the property of wealthy stockmen—men who would come with capital at their command, and who would not (as now too often happens) be "wiped out" by the casualties of one bad winter. More especially would the wool-growing interest, and the Woollen Manufactories of the country, profit under such a system, until ultimately the latter might be able to compete successfully for at least the trade of Northern Asia, with the long-established woollen mills of Europe.

STOCKMAN.

INDIAN LEGENDS.

Preservation of the legends and traditions of a people that is passing away is a task of more than common interest, and probably no unwritten history offers more of the weird and strange, with less of harmful and degrading superstition, than that of the Indians of North America. Whilst such narratives may contain little that will add to the practical knowledge and progress of the present age, they are at all times read with a curious avidity.

Comparatively little has yet appeared in print of the dim traditions and historical legends of our Western Indian Nations and Tribes. Book-makers have not yet done with those who peopled the Eastern and Middle States a hundred years ago. Here, in the West, is an unworked field, and it is time the harvest was being gathered, before the promised war policy shall have done its final work in their extermination.

For a dozen years the writer has been thrown often and much among the Utes, (Utahs), our nearest and best known red-skinned neighbors. In the many long evenings around the camp-fire, on the Western Slope, not a few of their oft-repeated and long-perpetuated traditions have come to his ear. One or two of these will here be noted down as nearly as possible as they were told.

The first relates to the origin of the prairie-wolf; the prowling, thieving despoiler of the Indian's larder, yet revered by him above all other ordinary animals. The latter sentiment is probably due to its alleged human parentage.

Many, many winters ago there were but two lodges of Indians in the world, and they were Utes and dwelt in the mountains. One family consisted of the father, mother, a beautiful young squaw—their daughter—and an ugly, surly, ill-natured son. The latter was named *Seenap*, (Grey Wolf). In the other family there were the father and mother, and a brave and skillful son named *Anoontosh*, (Marten), who was a mighty hunter. Anoontosh fell in love with his beautiful neighbor, and wanted to marry her, but as there was not another young squaw in the world, her surly brother, Seenap, objected, because he wanted to marry her himself. But Anoontosh was vigilant and brave, and one night he stole her away and carried her off to his lodge, where they became man and wife. At this, Seenap became very angry, and for twelve years he tried to steal upon the lodge of Anoontosh, and carry away his squaw—his own sister. But Anoontosh's lodge was at the foot of a high mountain, and to guard it from surprise he had a pet antelope which had a hundred eyes, and it

watched from the top of the mountain. Whenever Seenap came prowling round, the antelope would see him with some of his eyes, which never all slept at once, and it would whistle to alarm Anoontosh. The latter would at once give chase, but Seenap was the fleetest of foot and always escaped his vengeance. At last, Seenap became disheartened, and he went to consult an old medicine-man and ask his advice. The latter went off by himself into a deep hollow where, after a big *pono-wono* (talk) and long meditation, he gathered the seeds of a certain plant and carried them to Seenap, telling him to catch a rabbit and sprinkle the seeds in its fur; he was then to carry the rabbit with him near to the camp of Anoontosh, and, when the hundred-eyed antelope saw him and gave the alarm, he was to drop the rabbit and run away. This he did, and when Anoontosh came forth to pursue his enemy, he found only a rabbit, which he killed and carried to his lodge. His squaw dressed it and threw the skin out of doors upon the ground. When Spring came, the seeds which were hidden in its fur began to grow and soon became a large tree. Seenap again consulted his oracle, and Old Medicine told him to go at midnight and bury himself in the rocks, all but his eyes, and to remain there for four moons. This Seenap did and, by the end of that time, the plant had borne seeds and the antelope ate of them and went to sleep—all of its hundred eyes at once. Seenap crept from his hiding-place, descended upon the lodge of Anoontosh, stole his squaw and carried her away to his own lodge. But she would not be his wife and tried to escape and go back to Anoontosh. At this, Seenap became very angry, and shut her up in a cave, where he compelled her to be his wife. In course of time she gave birth to his offspring, but it was a *yocoates*, (coyote, or prairie wolf).

During all this time, Anoontosh was searching far and wide for his stolen squaw, but could find no trace of her. After the birth of the *yocoates*, Seenap came forth from the cave, and again built a lodge, but took great care that the squaw should not escape him. But she tamed a little wren, and amused herself by talking to it. At last by much talking to, it also learned to talk and to go and come as she directed. So, one

day when Seenap was away, she told it all her troubles, and to go and find Anoontosh and tell him where she was. The wren found Anoontosh, told him all, where Seenap's lodge then was, and how to get there. So on started at once, taking the antelope along, that it might see and tell him when they got within sight of Seenap's camp, and how to get near enough to shoot him; for he knew that if Seenap should see him before he got within range, he would take the squaw and run away again. The antelope saw the camp a long way off and told Anoontosh how to get near to it. Anoontosh waited until the heat of the day, when he knew Seenap would be in the lodge resting, if not asleep, and then he crept up to the lodge and killed Seenap. But the *yocoates* looked so pitiful that he could not find courage in his heart to kill it, and so he brought all the meat there was about the camp and laid before it. Anoontosh then took the squaw and went back to his own lodge. The coyote lived upon the meat, until he was big and strong enough to steal his own meat, and he shows his origin and early training to this day, for he is always sneaking around the lodges to steal and carry away whatever he can find.

[Note.—The writer has been told that this legend, or something like it, may be found in the Book of Mormon, or Mormon Bible, but it is therein attributed to a very different source.]

The second legend which will be given in this article is also from the Utes, and relates to the Hot Sulphur Springs in the Middle Park of the Rocky Mountains, which they hold in high esteem, bordering upon superstitious reverence. They use the waters as medicinal baths, both for themselves and horses, and for all kinds of ailments.

A long time ago there were many hundreds of lodges of Utes living in the mountains. Game of all kinds was plentiful, peace reigned, and all they had to do was to kill and eat. But a dissension arose in the tribes about going on to the war path. An old Medicine-Man, *Spiquet Pah*, (Smoking Water), was opposed to any parties going out of their own country to fight. But a young chief who wanted to immortalize himself, and who, it seems, was "spoiling for a fight," so influenced the minds of the young

bucks with his glowing pictures of the "pomp and circumstance of glorious war," that the war party was soon the most popular, as is frequently the case. A general council was held on the "Great Plain," (Middle Park), whereat words ran high and a quarrel broke out between the old medicine man and the young chief and their respective adherents. The chief delivered a bitter speech against Spiquet Pah and his peace policy of staying at home like squaws—killing nothing better than game. He said: "There is not an enemy's scalp in all our lodges; the war dance is forgotten, and the bow is less used than the awl. You braves that won't go on the war path should be compelled to leave the tribe, to go to the Uintahs, or be killed."

Old Spiquet Pah, in humility and deep sorrow replied: "My brother talks as the North Wind that comes in the season of falling leaves and ripe berries. The sound of his voice chills the life-blood in our bodies as the North Wind chills the life of the grass and the fruits. As the North Wind soon brings the snows and death of winter, so would he bring sorrow and death to our people. When the snows of winter are upon us, the buffalo, deer, and antelope are not found, the elk calls together his tribe and goes to the lonely mountains. The beaver creeps into his lodge and is seen no more, the bear sleeps till the snow is gone. Nothing is left, but the great white wolf, which destroys all that it can master, and the thieving *yocoates* (coyote) that steals everything it can find. If you do this, Strength, and Peace, and Plenty will depart from us forever; Health will be for but few; Joy will be seen no more; Courage will desert us because of our great sorrow, while Want and Hunger will be with us always; our children will cry for food and we will have none to give them; war will kill our young men, and disease will destroy our young women; in a few snows our number will be but few. Then, the Shoshones will come from the North, and the Sioux will come from the East, and the Navajos will come from the South, and the Uintahs will come from the West, and our people will fall before them, as the leaves fall before the North Wind in winter. My Brother's talk is bad. I am done."

But they followed the advice and the leader-

ship of the young chief, and went upon the war-path against the Sioux, and got badly thrashed—(as they generally do to this day). War thinned their ranks, and their scalps adorned the lodges of their enemies. Disease depopulated their villages, and their children cry always for food. Spiquet Pah's prophecy was literally fulfilled and its fulfillment is ever being repeated. When the young chief and his followers set out for the land of the Sioux, Old Medicus realized fully the usual fate of prophets—to be without honor in his own country—and in his deep sorrow and chagrin, he retired and went into the heart of the mountain, and—as an irreverent trapper said,—“pulled the hole in after him.” There, he now sits on his hunkers, by the side of his camp-fire which is built on the bank of a stream, and so near it that the water is heated by its blaze. Whilst he ruminates on the uncertainty of greatness and the ingratitude of his children, his camp-fire forever warms the water and it flows out to cure the sick, to heal wounds, and to wash the unclean.” The Indians say it is “heap good.” War, and disease, and famine have chastened them, and they now revere the memory of him whose counsels they did not respect whilst living.

A curious fact is noticable at these springs. Water from several of them, collecting into a considerable rivulet, pours over a ledge of rock and falls into a deep pool twelve or fifteen feet below. In the stillness of night, and in certain conditions of the atmosphere, this falling water gives forth a clear, distinct and metallic musical sound, of which the Indians stand in great awe.

WM. N. BYERS.

MOUNTAIN ELEVATIONS.—In the Alps, two thousand feet lower than the elevation of Georgetown, one would be in a region of perpetual snow. In Switzerland, at an elevation of two thousand feet, the vine disappears altogether. But here in Colorado, at an elevation of about six thousand feet, grapes can be grown, it is believed, with comparative ease. At an elevation of about six thousand feet the high-land zone of the Alps begins, the upper limit of trees; herds never go higher, nor are chalets to be found beyond that line. Here in the Rocky Mountains, five thousand feet higher than that, we find large forest trees. In Georgetown, eight thousand four hundred and fifty feet above the sea, snow in summer would seem almost as strange as on the sunny pavements of New York.—*Rocky Mountain News*.

THE MINERAL LODGE.

An attempt to interest general readers in the Ore-bearing Mountains around us must of necessity be a difficult task, for the writer may not use the terms which are most familiar to himself, lest his article should be thrown aside as "too scientific;" he must perforce confine himself almost entirely to unscientific language.

If, however, I am forced sometimes to use a word unknown in common parlance, I shall ask my readers to accept it and excuse it, on the ground that a thing must be called by its proper name if it is to be identified with any certainty. A violet may not be called a forget-me-not; and, if flowers need their distinctive names, so also do those things with which Science has to deal.

To take an illustration. Nearly everyone will say that this Rim Range is composed of the original Granite Rocks (*Azoic*, we call them). But they are not *Azoic*, they are *Metamorphic*, and this is a difference quite as great as is that between a violet and a forget-me-not. A violet blooms under conditions other than those under which a forget-me-not blooms; and *Azoic* Rocks were made under other conditions than *Metamorphic*. Of the first two, both may be of the same chemical formula—a combination of carbon, hydrogen, and the like; of the two latter, both may be formed of crystals of quartz, feldspar, and hornblende; but, in both pairs, the particles of each have united differently under different conditions. This Rim Range (the majority of the Rocky Mountains in fact) was once sandstone, limestone, and shales, lying horizontally, like other kindred formations; it was raised up later by a force not yet fully understood, a force that, by the pressure which it caused each separate particle of rock to bring against its neighbors, engendered heat enough to melt and re-combine those particles, until the whole mass was so changed that it is left to the chemist to tell us what it originally was. After this, the Range was ground down by the Glaciers which once moved over it, leaving signs of their presence, and a story that tells us, in something more powerful than words can ever relate, that the climate here was not always "Italian," and also cut and hacked at by a mighty roll of waters,

which, starting from the North, carried mighty boulders with them to grind and wear away these "indestructible" Mountains, until we have this Range as it is, a field for pleasure and science, not more wonderful to the tourist than to the mineralogist; not more beautiful in its ever-changing lines and shadows, than in the variegated particles that form it.

Another force had come into operation prior to these two, a quieter but not less useful agent. This Range once oozed with mineral springs, and they, too, have left behind them the evidences of their working; not, however, as did the other forces of which we have spoken, in marks of uncontrollable power, for these, where they destroyed, also re-created (from the *debris* and from their own resources,) and their recreations are the veins of lead, silver, copper, gold, iron, and the like.

This, then, is the theory of the formation of the mineral lode. The mineral veins were formed by mineral springs acting upon the rocks; not spurted up from below (after the manner of volcanic injection) as it used to be asserted. We know that we are right, because the chemist has proved it, because, as mineralogists, we can see it.

I have promised not to be scientific, so I cannot prove the correctness of the theory, as I should like to do; but, without argument, I will try to describe how these springs went about their work. I have said that these mountains are composed of metamorphosed sandstones, limestones, and shales. The waters from the mineral springs found their way to these limestones, permeated the softer rocks, and dissolved the earthy carbonates contained therein; a re-composition took place, and, in the place of these carbonates, were left the carbonates, sulphides and sulphates of the precious metals.

You may say that this theory necessitates that the water should contain the metals in solution. This was the great drawback to the acceptance of the theory. But it has been discovered that the Ocean is the greatest gold mine in the world—(the other metals we know were retained in solution). The Ocean, it is true, is not a rich mine,

but, vast as its bulk is, it holds a quantity of gold in solution in it, equal to a grain to a ton, for so, a great chemist, Sonstadt, has recently proved.

The springs permeated where the rock was softest and deposited most where they had permeated most; where the rocks were harder they did but little work, so the lode or vein was formed, not always a continuous stratum, but at times only a series of pockets, connected by leaders.

Notice, also, that this water could only dissolve the lime and kindred rocks; it left the quartz and we still find it.

From what we have thus learnt concerning the bygone transformations which have resulted in the formation of mineral veins, we should be able to deduce some facts which may be of interest.

One deduction will at once naturally suggest itself to all—that a lead will not always grow richer the deeper it is opened. How can we pretend to say that in a few hundred feet the vein will grow wider or richer, when we are as many thousand feet down on it already? For, if you remember, I stated that these Mountains have

been cut down *since* the formation of the mineral veins.

But this we do know—that at some point below us, (that is, below where the mineral water permeated) the vein will cease to exist. Then, we should look for veins with well-defined walls, which is an index that the original seam was of such a nature that the water could work through it for some distance regularly,—for if the original seam was hard, and the water therefore had trouble to permeate it, the vein necessarily must cut out and pocket up in places.

Again, other things being equal, the richer seams should be found the higher we get on the mountain side, or in other words the nearer to the spring-head.

And, still again, a very thick vein will not probably be as rich as a thinner one, since the waters would be too much diffused through the whole mass. An example of this fact was afforded in the Constock lode. This lode is, at times, sixty feet thick, but at one place it narrows to nineteen feet, and it was there that the richest ore yet mined was found. R. NEILSON CLARK.

MEXICO AND THE MEXICANS IN 1872.*

NO. 1.—FROM MANZANILLO TO COLIMA.

It was early on a March morning that our steamer ran into the harbor of Manzanillo, and that we first stepped upon Mexican soil.

The beach was gay with groups of children in bright colored cotton clothes, playing in the sand; women with rebosos (a long cotton scarf) drawn gracefully over the head and the end thrown over the left shoulder, passing along with earthen water jars in their hands; and men dressed in pink or white cotton shirts, white trousers, the universal broad-brimmed palm-leaf sombrero, and a serape or blanket of various colors over one shoulder.

The water of the bay looked bright under the blazing tropic sun, and made us long for a sea bath after the heat of our voyage, till we saw a

black fin appear within thirty yards of the shore, and then learned that the bay was full of sharks. There has been no accident with them for several years, said our informant re-assuringly, but we thought the time for some disaster might be just recurring, and we would not run the risk of being the victims.

The harbor is small, but very good and safe, with water twenty feet deep close to the beach. It is almost land-locked, the entrance to the inner bay being between two lofty rocks covered with low scrub and cactus. To the north of the bay is a belt of low land, thickly wooded, out of which rise the feathery heads of the Coquito Palm, backed by mountain ranges one above the other till the last is almost lost in the clouds. Facing the west lies the little town, consisting of two large warehouses, with deep verandahs, and a few dozen small houses, mostly thatched with palm leaves, along a narrow strip of sandy beach. Behind it rise wood-covered hills, be-

* This and one or two other letters from the same contributor appeared in the Old Series of OUT WEST, but it is thought well to re-publish them, in order that the whole of the sketches may be brought together in our New Series.

tween the sea and the Laguna de Cuzutlan, which lies directly behind the town and is reached through a narrow gap in the hills. The hills looked quite brown as it was the end of the dry season, and the leaves would not be out till the rains came in about six weeks. The rainy season here lasts from May or June till November.

Though a small place, Manzanillo does a very large trade. Its chief exports are coffee, rice, indigo; woods, such as cedar, rosewood, and Primavera, (a hard yellow wood used for car bodies), and Coquitos. The last are small brown nuts, about the size of a pigeon's egg, and are gathered from the Coquito Palm; 500,000 pounds are exported annually from Manzanillo to be used for oil and candles. All these goods are brought down on pack mules, of which as many as six hundred may be seen on the beach at once.

In the outer bay of Santiago, large quantities of pearl oysters are found, some of the pearls being extremely fine; there are also very good eating oysters in the bay, but the difficulty of transportation is so great, owing to the absence of roads, that little attention is given to them.

We spent several hours at the hospitable house of some German merchants, and at 4 p. m. set out on our journey, some of the party riding pretty little Spanish ponies, loaded with trappings as is the fashion here, and the rest of us in a dilapidated old Phaeton drawn by two mules, the first wheeled conveyance that had ever left Manzanillo, as till two days before our arrival, there had been no wagon road to within several miles of the town. Usually, all passengers go by a small steamer or canoes up the Laguna de Cuzutlan. But last year, owing to the extreme dryness of the season, it was too shallow for navigation.

Passing through the town—only one street a hundred yards long—we came suddenly on a magnificent view of the lake, on the further side of a belt of green fringing the water, blue mountains rising behind. The Laguna itself, bathed in evening sunshine, was literally covered with fowl and white cranes, while here and there a black log turned slowly over in the water, and, as it disappeared, we found we had been watching a caiman or alligator.

The road wound along the shore of the lake, bordered with Mangrove trees, which raised themselves out of the poisonous swamp in which they grew, on stilted roots three to six feet high. On the right of the road rose the rocky hills of the Punta de Ventanas. Huge Organo cactus, from thirty to forty feet high, with single stems three feet in diameter, stood up like giant candelabra among the brush, and parrots flew screaming and chattering over our heads.

The road itself baffles description, being still in process of making; suffice it to say, that we were bumped and jolted over rocks, stones and hills, till we came on what was, if possible, a little worse—deep sand on the narrow strip of land which divides the Laguna from the ocean. Then for two leagues we had to go at a foot-pace, choked and smothered in the blinding dust, but wherever the road was good we enjoyed the drive, as the vegetation there was much greener, and our companions on horseback soon got us handfuls of lovely flowers, such as we see in green-houses at home.

At Campos, a picturesque village of open palm-thatched huts, we halted as the sun set about six, and had a capital supper, far above anything we would get at an average railroad restaurant. It consisted of boiled eggs, delicious coffee, "pan de huevos" a light sweet cake, and tortillas. As these last are one of the main articles of food in the country, I may as well describe them at once, as one meets with them everywhere. They are made of maize boiled and then rubbed into a fine paste on a small stand of lava, called a Metate; when the paste is perfectly smooth, a piece is taken in the two hands and patted and slapped till it is as thin as a half dollar, the size of a plate, and about as tough as an ordinary sheepskin, it is then baked a moment on a griddle and served hot but quite limp. It is used as spoon and fork for eating the Frijoles or small brown Mexican beans, without which no meal is considered complete, thus: you tear off a corner of tortilla and divide in two, one half you double up to make a receptacle for the frijoles, which you push in with the other half, and eat spoon and all together. It is rather a nice operation at first, but one soon acquires the knack.

After our supper we changed into a three-seated

ambulance with no springs to speak of; a wooden roof just too low for our heads, so that we had to lean forward all the time; four mules, and an intensely stupid driver, by name Guadalupe. We went off at a good pace in the darkness through the woods, along a road which had just been cleared, having to keep the curtains tight down to avoid scratches from the thorns which every tree seems to bear in the tropics. Some of the party managed to get a little sleep, but I could not close my eyes and the hours went by slowly, now creeping through sand, now jolting through a clearing, over all the stumps (Guadalupe took special pleasure in driving over stumps), then dashing full gallop across an open bit of dry swamp. Here and there we passed an ox or mule train, halting for the night by the side of a bright fire, and then came an interchange of compliments between the drivers, and with a "buenas noches, señores," on we rattled, Guadalupe making the night hideous with his yell of "He-cha, mula," accompanied with a crack of his long whip like a pistol-shot.

At 1 p. m. we reached Cuzutlan Sillo, the end of the Laguna, and crossing a long dyke stopped to change mules. The ground around was white with salt, which is collected in large quantities all along the shores of the Laguna and in its immediate neighborhood, and sent inland. It was a malarious place and we were glad to leave it, when our team was hitched up, and make the best of our way to El Paso del Rio, where we were to take a few hours rest.

The Rio de la Armeria, when we reached it at 3:30 a. m., was nearly dry, having at the ford only about one hundred and fifty yards of water, but though it was not more than three feet deep, the passage was rather alarming, as the bed of the river is nothing but huge stones, and, of course, in the worst places, our mules refused to go on. However, we got through somehow, and half a mile more took us to the house of Don Ignacio Lagos, where we were to stop.

It did not look inviting—nothing does I think at 4 a. m. after a long journey;—but at last we managed to knock up the inhabitants, and got two rooms—bare of furniture, it is true, save sackings beds and a table, but tolerably clean, and

Senora Ramonsita Lagos, a comely lady, brought us clean sheets and pillow cases, with deep lace trimmings of her own work, and we soon made ourselves pretty comfortable.

I did not get much sleep, as an incessant noise was kept up of cocks, burros, mules, cicadas and human beings, who seemed to get up just as we went to bed. By 8, we were ready for a delicious breakfast, taken in the deep palm-thatched portico shading the house which was built round the farm-yard, so that we had plenty of company in the way of fowls, dogs and pigs at breakfast time. We had Pollos (chicken) small and tender, eggs, bread, tortillas, frijoles, coffee, and chocolate. The Colima coffee is, I think, the best I ever tasted, equalling or excelling the finest Mocha, and, as it is kept in the little husk which surrounds the two berries and is husked and ground fresh every time, it loses none of its delicious aroma by keeping. It is also cooked to perfection, however miserable the hut it comes from; indeed, we have found the Mexican cooking admirable, if they were a little less profuse in their use of garlic, which manages to find its way into most dishes. It was the first time that most of us had eaten a meal every item of which, down to the sugar and salt, was produced in the country.

At a little before 10 we started again, sending back the saddle horses and going on in the two wagons. The road for four miles lay over a grassy plateau about fifty feet above the river. The view was magnificent, with mountains on three sides of the horizon and the ocean on the fourth, though we were not quite high enough to see it. After leaving the plateau, which is fine grazing land, the road led us without a turn for several miles through the woods. They were burnt and brown with the summer sun, with only here and there a red or yellow flower of cactus or acacia. The timber is poor and crooked, and altogether the country looked very different from my former acquaintance with tropic forests. However, it is another thing as soon as the rains come. At a hut by a small stream we stopped a moment to get a bunch of bananas and a draught of cocoa-nut water, most refreshing after a dozen miles of heat and dust.

One o'clock brought us to Tecolapa, a pretty

village with a grove of coco palm trees, and we stopped to change mules. One of the party went out to forage for provisions, and soon returned with two *senoras*, one old and ugly, bearing on her head a tray of excellent eggs and tortillas; the other one, a lovely girl of about seventeen, by name Catalina. She was dressed daintily in a white gown, little pink apron, red shoes on her tiny feet, and a blue cotton *rebosa* covering all her pretty face save her large brown eyes. She seemed as handy as she was pretty, for her "*frijoles con queso*" (beans with grated cheese) were perfection, and what we left were carried off as a prize by our men.

We had been coming along the best road, though not through the most populous district, leaving most of the sugar, cotton, and maize haciendas on the side near the Armeria. The uncleared land costs \$4.00 per acre, and will always produce one crop of sugar or cotton in the year, and with irrigation would produce two crops. Leaving Tecolapa, and getting a last view of the Pacific Ocean, we began a pretty steep ascent through woods to the pass in the mountains which leads into the Valley of Colima. The summit was 1,470 feet above the sea, and up the steepest part government has made a fine graded road. The descent looked so uninviting that most of us preferred walking down to trusting our necks to four mules at full gallop and an improvised brake made by tying one of the hind wheels to the front axle, over a road which seemed simply a pile of rocks. After a walk of three-quarters of a mile we got to our wagons, none the worse, strange to say, for their rapid descent, and by about 5 we approached Las Mescales. Here we suddenly found ourselves in view of the most sublime sight in nature I ever saw. From a plain twenty miles broad, and not 1,000 feet above the sea, with a few low ridges in the foreground, rose the Volcano of Colima, 13,000 feet high, with a crown of smoke, pink in the setting sun against the clear blue sky, and wreaths of light clouds along its sides. Much as we had heard of the grandeur and beauty of the volcano, it far exceeded our expectations, and coming upon it so unexpectedly greatly increased the effect of the view.

With a "*remuda*" or relay of three ponies

and a mule, all with dreadfully sore backs, which seemed to make no difference to their owners or drivers, we started along a good, though dusty road, up the last rise before reaching Colima. From it we looked over the beautiful fertile valley with its water-courses shaded by trees, its rows of coco palms and rich fields.

At about 7 we reached the town and rattled through the streets, our "*cochero*" yelling and whipping the hapless ponies till they fairly galloped, and in a few moments more we stopped at the hospitable house of *Senor H.*, which, with true Mexican hospitality, he placed at the disposal of our party.

ROSA DEL MONTE.

THE PINON PINE.—The Pinon Pine is a tree with which our home readers are quite familiar. It grows quite extensively upon some portions of the table land a few miles north and west of Pueblo, and has been for years the chief dependence of our people for fire wood. In this respect, when dry, the Pinon more than supplies the place of the Eastern hickory, since it makes a better heat and requires less labor in the cutting of it. The following description of this useful Rocky Mountain evergreen given by an eastern naturalist, will be recognized as accurate: *Pinus Edulis*, called also Pinon Pine by the Mexicans, bears a sweet and nutritious nut, which is highly valued as an article of food by the Indians. It is usually a small tree, short bodied, with numerous crooked branches and a dense foliage. Its wood is very hard and full of pitch, compact and brittle. It is first seen near foot-hills of the mountains. Grain in its neighborhood is only grown by irrigation. On high table-lands and ridges, and steep, rocky mountain-sides, it takes its strongest hold and flourishes best. Its leaves are in pairs, two inches long, dark green, coarse and ridged, and are persistent for two or more years. It gives a dense shade, and makes an excellent wind breaker. When, at the end of a hundred years, the tree has reached thirty or forty feet in height, and as many in diameter at its rounded top, it possesses great beauty and gives its biennial crop of nuts, and would then be greatly esteemed. It would never suffer from the droughts of summer, or be likely to perish from the cold or winds of winter, as it thrives to the very limit of the pines, and nearly to the line of daily frosts. In favored localities it grows in large numbers at a considerable distance from its fellows, and gives the landscape the appearance of a beautiful park. It then excludes underbrush and other trees. The town of Trinidad, in the valley of the Las Animas, is surrounded by a most charming grove of these trees. The valley of the little river is about two miles in width and the undulating acres upon either side of the stream for many miles are spread over with a growth of pinon, that no gardener's skill could have arranged with greater artistic effect. The roads and drives wind in and out, and give glimpses of waters, and valleys, with high mountains beyond, that greatly strengthen the fancy that it is the park of some nobleman whose wealth has been expended for years in adorning and beautifying its magnificent proportions. Also, in the region of the Upper Arkansas, from the Poncho Pass to the Twin Lakes, this tree grows in luxuriance.—*Pueblo People*.

THE CALORIFIC VALUE OF WESTERN LIGNITES.*

The important question of the metallurgical value of the coals of the Rocky Mountains and the Pacific Coast is to be settled, of course, by practical experiment. Meanwhile, as I have had occasion to point out, the proximate analyses of these coals throws little light upon it, and is, indeed, likely to mislead the metallurgist, if he compares it with the results of similar analyses upon bituminous and semi-bituminous coals. With the view of showing how large a proportion of the material usually classed as "volatile matters" consists of combined water, or oxygen and hydrogen presumably in chemical combination, I have collected a number of ultimate analyses from various sources, in the following tables. The numbered analyses in the first table are as follows:

- No. 1. Monte Diabolo coal—Analyst, H. S. Munro.
2. Weber Canon, Utah, " "
3. Echo Canon, " " "
4. Carbon Station, Wyoming, " "
5. " " " "
6. Coos Bay, Oregon, " "
7. Alaska, " "
8. " " " "
9. Canon City, Colorado, Analyst, Dr. T. M. Drown.
10. Baker Co., Oregon, " "
11. Block Coal, Sand Creek, Ind., Prof. E. T. Cox.

No.	Carbon	Hydrogen	Nitrogen	Oxygen	Sulphur	Moisture	Ash
1.	59.72	5.08	1.01	15.69	3.92	8.94	5.64
2.	64.84	4.34	1.29	15.52	1.60	9.41	3.00
3.	69.84	3.90	1.93	10.99	0.77	9.17	3.40
4.	64.99	3.76	1.74	15.20	1.07	11.56	1.68
5.	69.14	4.36	1.25	9.54	1.93	8.06	6.62
6.	56.24	3.38	0.42	21.82	0.81	13.28	4.05
7.	55.79	3.26	0.61	19.01	0.63	16.52	4.18
8.	67.67	4.66	1.58	12.80	2.92	3.08	9.28
9.	67.58	7.42	13.42	0.63	8.18	5.77	
10.	60.72	4.30	14.42	0.08	14.68	3.80	
11.	72.94	4.50	1.79	11.77	4.50	4.50	

* A paper read before the American Institute of Mining Engineers, at Philadelphia, May 21, 1873; being also a chapter in the forthcoming Report of the Commissioner of Mining Statistics.

No.	Combined Water	Calorific Power I.	Calorific Power II.	Calorific Power III.	Temperature, Degree Cent.
1.	17.65	5900	6472	5757	2520
2.	17.46	6056	6685	5912	2536
3.	12.36	6515	7172	6400	2603
4.	17.10	5892	6662	5738	2512
5.	10.73	6679	7264	6578	2630
6.	24.55	4768	5498	4565	2313
7.	21.38	4814	5766	4610	2375
8.	14.40	6522	6729	6428	2532
9.	15.10	7439	7845	7330	2683
10.	16.22	5768	6760	5602	2497
11.	13.24	6938	7208	6843	2654

This table affords some suggestive comparisons, to facilitate which a remark or two, explanatory of its construction, will be useful. In the ultimate analyses of coals, the proportions are frequently calculated (as, for instance, in the report for 1872 of Prof. Cox, State Geologist of Indiana) upon the dry coal—that is to say, excluding the percentage of moisture. Thus the analysis (No. 11 above) of the Sand Creek Block coal is given in that report (p. 18) as follows: Carbon, 76.38; ash, 4.71; hydrogen, 4.71; oxygen, 12.32; nitrogen, 1.88—the previously given proximate analysis having shown 4.50 per cent. of moisture. To secure uniformity in the table, I have reduced these results to the basis of a full analysis, including the moisture. The justice of including the moisture of the coal in calculations of its calorific power would be unquestionable, if the moisture were a constant element. This it is not; it varies in amount, according to the local conditions affecting the samples taken. But, on the other hand, some moisture is always present; and an amount not exceeding five or six per cent. is scarcely too great to be included in an estimate of average quality. Prof. Frazer's proximate analyses of New Mexico coals give an average of 3 per cent.; of the Boulder County coal of Colorado, 16 per cent.; of the Evanston coal, 5.83 per cent.; and the average of 93 analyses of Indiana coals, made by Prof. Cox, gives 5.87 per cent. of moisture.

Now this moisture is a greater detriment to the heating power of the coal than an equal amount of ash, since the water requires to be evaporated, while the ash does not. I have therefore included in the above table the percentages of moisture, as a basis for caloric calculations, though in several instances (notably Nos. 4, 6, 7, and 10) the amount of moisture is, perhaps, abnormally great, and the calorific power resulting from the calculation may be less than the average of the coal would give. *There are, it will be noticed, three columns of calorific powers. In each of these the amounts are expressed in centigrade heat units, and therefore indicate directly the pounds of water which could theoretically be raised from zero to the boiling point by the combustion of one hundred pounds of fuel.* The first column is obtained in the following manner: The amount of combined water is found by adding to the oxygen one-eighth its weight of hydrogen; the remaining hydrogen is multiplied by 34.462, the number of heat units evolved in the combustion of hydrogen; and the amount of carbon is, in like manner, multiplied by 8,080, the caloric modulus for carbon. The sum of these two products is the number of heat units generated by the complete combustion of one unit of the fuel, containing the given proportions of carbon and available hydrogen. The heat units due to the combustion of the sulphur are disregarded, in view of the small amount of sulphur, its low calorific capacity (about 2,240 units), and the circumstance that it exists partly in the form of pyrites, the decomposition of which still further diminishes the amount of heat from this source, and partly as sulphuric acid, causing a net loss.

The second column of calorific powers is obtained by a similar calculation on the supposition that the moisture is absent. The third column gives the closest approximation to the available heat, and is obtained by deducting from the figures in the first the amount of heat units required to vaporize the moisture and combined water. This is 537 units of heat for each unit of water.

The last column gives in centigrade degrees the maximum theoretical temperature to be obtained by the perfect combustion of the fuel. It is calculated in the following manner: The quantity of carbonic acid, sulphurous acid, water and nitro-

gen, resulting from the combustion of one unit of the fuel in atmospheric air is determined, and the quantity of each of these substances is multiplied by its specific heat. The sum of these products, which we may call the temperature unit, is the number of heat units required to raise the mixture one degree in temperature. Dividing the number of heat units given in column III. by this temperature unit, we obtain as a quotient the number of degrees centigrade through which the temperature of the fuel will be raised, or, in other words, the average temperature of the products of combustion, on the supposition that the initial temperature is zero, that the combustion of carbon and hydrogen is complete, that no superfluous air is admitted, and that there is no loss by radiation and conduction during the process. The calculation may be illustrated by displaying a single example in detail.

We have in analysis No. 1 of the table the following constitution of the fuel: Carbon, 59.72; hydrogen, 5.08; nitrogen, 1.01; oxygen, 15.69; sulphur, 3.92; moisture, 8.94; ash, 5.64. To find the combined water, we add to the amount of oxygen the proportional amount of hydrogen, or one-eighth, since water consists of one part hydrogen and eight parts oxygen. This gives us 17.65 combined water, leaving 3.12 of hydrogen available for the generation of heat. But the moisture and combined water must be evaporated by the combustion of the rest of the fuel; and the heat absorbed in this evaporation is 537 heat units. Hence, to evaporate 26.59 hundredths of water will require (temperature apart) 142.78 heat units, which must be subtracted from the calorific power in column I., leaving 5757.22, as per column III., the available amount of heat.

We now proceed to determine the temperature of the products of combustion. A simple calculation based upon the chemical equivalents shows that those products will be as follows:

59.72 carb. will unite with 159.28 oxg., forming	219.00 CO ₂
3.92 sulphur " 3.92 " " "	7.84 SO ₂
3.12 hydrogen " 24.96 " " "	28.08 H ₂ O
26.59 combined water and moisture.....	26.59 H ₂ O
Total oxygen required from the air.....	188.16
Amount of nitrogen corresponding to this amount of oxygen in the air.....	629.86
Amount of nitrogen already in the fuel.....	1.01

Total nitrogen in the products of combustion. .630.87 N

The specific heat of carbonic acid—that is, the number of heat units required to raise a unit of this gas one degree of temperature—is 0.216; the specific heat of sulphurous acid is 0.155; that of steam is 0.475; and that of nitrogen is 0.244. Applying these numbers, we have for the heat rendered latent by each substance in one hundred units of the above mixture of gases:

CO ₂ ,	219.00X0.216 =	47.304
SO ₂ ,	7.84X0.155 =	1.215
HO,	54.67X0.475 =	25.968
N,	630.87X0.244 =	153.932

228.419

That is to say, it will require 228.419 units of heat to elevate the total products of combustion of 100 units of fuel one degree centigrade; or, 2.28419 is the specific heat of the products of the combustion of one unit of the fuel. Dividing 5757.22, the number of available heat units from the combustion of one unit, by 2.28419, the heat absorbed for each degree of temperature, we have 2520, which is the temperature in degrees centigrade of the products. It need scarcely be said that the unit of weight employed is immaterial to this calculation. The temperature is the same, whatever the quantity of fuel, provided the combustion takes place as above supposed, and the gases are not compressed.

It should be remarked, finally, that the oxidation of iron in the ash has not been taken into account in the foregoing calculations. The analyses give no means of determining it; but it is certainly insignificant as a source of heat, and its contribution to the resultant temperature would be reduced by the diluting effect of an additional quantity of nitrogen in the air required for its oxidation.

Pure carbon yields by combustion to carbonic acid 8,080 heat units; and the theoretic resultant temperature of the carbonic acid produced is 2,720°. It will be seen that some of the coals in the table, particularly the lignites of Cañon City, Colorado, and Carbon Station, Wyoming, approach the calorific power of carbon.

Moreover, several of the lignites nearly equal, and that of Cañon City surpasses, the black coal of Sand Creek in calorific power. Yet the latter is successfully used in the smelting of iron. We

are therefore led to conclude that high metallurgical temperatures can be obtained from the best lignites of the Rocky Mountains, and that only their physical behavior, which hinders a complete combustion, prevents their use, even in shaft furnaces. That they can be utilized by means of gas producers, I think there is no room to doubt.

R. W. RAYMOND.

[NOTE BY THE EDITOR.—The above testimony of Professor Raymond to the value of several of the Western Lignites, and especially of the Canon City coal, for metallurgical purposes is of the utmost interest as affecting the future of the Rocky Mountain Section. With abundance of rich iron ore, and with coal also in rich abundance to smelt and work that ore, it scarcely need be pointed out that this Section (isolated, as it is to a great extent, from other sections of country possessing rich resources) must be the seat of manufacturing industries on a scale as large, probably, as those in any part of the Union. As we have pointed out in another article, its geographical position and the varied natural elements of wealth which it possesses must inevitably attract an enormous population, to supply whose wants, manufacturers of every kind must be set on foot on a corresponding scale; and these, in turn, must exert a powerful influence in building up the population.]

OUR RESOURCES.—With what a feeling of pride should every true citizen of the West contemplate the vast and incalculable resources of these Rocky Mountain States and Territories? No country in the world can furnish such a striking example of self-sufficiency, or non-dependence upon another section, and none in the world such a prospect for the development of untold prosperity as this. With our gold and silver-ribbed mountains; our foot-hills of unequalled richness in coal, iron and copper; our fertile valleys, already teeming with the life-supporting cereals and fruits; our broad plains, upon which countless herds are now feeding; and our immense forests of the pine and cedar, we may well glory in the knowledge of possessing all the natural elements and resources necessary to the growth and existence of a great people. To a comprehensive mind it is indeed a pleasure to anticipate the glorious future of such a country. What a field for advancement, and what a field for men of brain, muscle, energy, determination? In a few short years the savage has been conquered; the fierce animals of the frontier exterminated; the valleys made to return bountiful harvests of treasures into the coffers of a prosperous people, and cities, not excelled in any country for evidences of taste, thrift, and business tact, have sprung up. We need not be content with mines, herds, beautiful valleys and thriving cities, but within our own borders find all the means of education, enjoyment and recreation. Our institutions of learning are not excelled by those of any in States of thrice our age; a closer bond of social union seems to exist on account of our fancied separation from the country beyond the plains, and our people enter more readily into the various circles already created for the purpose of furthering the enjoyments of all classes in life; and no country yet discovered furnishes such a rich field for the tourist, the weary business man, or the hopeful invalid, for no country possesses such grand scenery and romantic retreats, or such rarefied, life-giving and life-prolonging atmosphere.—*Colorado Agriculturist*.

COLORADO'S PROGRESS.

The first Annual Report of the Denver and Rio Grande Railway, just issued, affords an instance of the rapid development which is going on in Colorado, and which will undoubtedly take place in other portions of the Rocky Mountain Section, as they become open (by the extension of Railways into them) to the incoming tide of emigration and civilization.

The length of line now in operation is 156 miles—118 of the Main Line, and a Branch, known as the Arkansas Valley Branch, of 38 miles. The facts presented in the Report are, therefore, fairly available as an indication of progress, for it can scarcely be urged that they have reference to a limited or exceptional portion of the country.

The grading of the road was begun in March, 1871, and the First Division—from Denver to Colorado Springs, a distance of 76 miles, was completed on the 27th of October, 1871, when the first train ran through. It was not considered as regularly opened for business, however, until January 1, 1872. The grading on the Second Division—from Colorado Springs to Pueblo, a distance of 42 miles—was begun January 1st and completed June 15th, 1872. The Arkansas Valley Branch was opened in November of the same year.

A bare comparison of the amount of passenger and freight traffic along the route before and after the Railway came into operation will be sufficient to show how great has been the development of the country in the short interval. The Report says that before the Railway replaced the stage coach from Denver to Colorado Springs, the latter ran tri-weekly and carried (as is shown in the prospectus of the Company) an average of five passengers per trip, or thirty, both ways, weekly. During the year 1872, the Railway (while under construction) carried on the same route, 25,168 passengers, or an average of four hundred and eighty-four weekly, being *an increase of over 1,500 per cent.* As regards tonnage, a few Mexican and other teams before the Railway was built, carried all that there was. The freight hauled by the Railroad in 1872 (an average distance of 61 miles) was 46,212 tons,

or, leaving out construction material, it was 34,892 tons of commercial freight.

But let us look a little more in detail at the state of things before and after the operation of the Railway in question.

Starting at Denver, we find, by the United States census, taken immediately before the commencement of the Denver and Rio Grande Railway, that that city had a population of 4,800. She has now a population of from 15,000 to 20,000, and her growth of population has been accompanied by corresponding progress and improvement in every department.

For ten or twelve miles from Denver southward, the country along the Platte was well settled, but beyond that the land was nearly all open to entry, and was, in those days, regarded as of but little value. Now it has nearly all been taken up, and small farmers are bringing it under cultivation wherever it is possible to get water upon it out of the streams.

Similarly, the "Divide" country was almost entirely open for settlement, whereas it is now regarded as one of the most valuable sections in the whole Territory, not only for the vast amount of lumber which it yields, but for the growth of potatoes, oats, barley, and hay, which are all raised upon it in large quantities, without the aid of irrigation; this owing to the amount of rainfall which is secured by its altitude and by its proximity to the mountains.

In the Monument Valley, we have a repetition of the same state of things—land formerly regarded as almost worthless, now eagerly seized upon, so that a desirable plot is difficult to secure.

Seventy-six miles from Denver, we reach Colorado Springs, the first town of any importance. Before the construction of the Railway, Colorado Springs had no existence, the site on which it now stands being bare prairie. Now, it is a flourishing town of about 1,500 inhabitants, built, there is no reason to doubt, on a substantial basis and with every prospect of continued growth. To quote from the Report: Twenty miles of irrigating ditches have been constructed, several

hotels built, school-houses, churches, telegraph offices, newspaper and printing office, planing mills, banks, etc., established, thousands of trees planted, parks laid out, and all the elements of an orderly and well-established society introduced.

The neighboring town of Colorado City, a creation of the "Pike's Peak Gold Fever" of '59, which had been gradually dwindling in size and importance since that excitement failed, has been awoken into new life, and numbers of substantial new buildings have been erected.

At Manitou, five miles from Colorado Springs, and the site of the famous Soda Springs described by Fremont, Ruxton, and other writers, a fashionable place of resort has been established, to which thousands of visitors from all parts of the Union have already found their way. Hotels, baths, and other conveniences for tourists and invalids have been provided.

Between Colorado Springs and Pueblo, a great part of the land in the Fountain Valley was taken up previous to the advent of the Railway, and the Valley was fairly settled. The growth, however, of the town of Fountain, fourteen miles south of Colorado Springs, is an evidence of considerable progress.

Pueblo (the present terminus of the Main Line) which made good its claim a few months ago to the title of "City," was, before the commencement of the Railway, a town of about five hundred inhabitants, and a sort of debateable border-place between the Anglo-Saxon civilization forcing its way into the West and the Mexican semi-barbarism of the South. It has now a population of over 3,000, and is pushing forward with an energy and a determination that augur well for its future. On the southern bank of the Arkansas, a new town, known as South Pueblo, has been started; and, although it is but a few months old, about a hundred buildings have been put up, and a population of about five hundred has settled there.

The construction of the Arkansas Valley Branch has resulted in the opening of valuable coal mines near Cañon City, from which fifty to one hundred tons per day have been mined during the Winter, and carried to different parts of

the Territory. A small town, named Labran, has grown up in the vicinity of the mines, and Cañon City, about nine miles further west, though not yet reached by the Railway, has had considerable growth and improvement.

Such, in brief, has been the extraordinary development along the actual route of the Railway—existing towns more than quadrupling their populations; new towns growing up as if at the touch of the magician's wand; land, previously accounted as of little or no value, eagerly seized upon by actual settlers and made to yield abundant harvests; mines opened, and their riches scattered over the Territory.

If we leave the immediate route of the Railway, we find similar growth and development.

Westward is the South Park, which, in a remarkably short time, has risen into importance as one of the richest Mining Sections of the Territory. An idea of the rapidity of its development may be gained from the following figures in reference to Fairplay, its principal town; the assessed value of property in Fairplay in May, 1872, was \$36,000; in May, 1873, \$196,000; population in May, 1872, 350; in May, 1873, 1,500; it is estimated that \$38,000 have been expended in improvements in the town during the past four months. Numerous mines are now being worked in the neighborhood, and two establishments for the reduction of their rich ores have recently been built.

Southward, beyond the present terminus of the Railway, there is also a rapid growth.

What is true of the Section to which we have thus referred somewhat in detail is true also to a greater or less extent, of nearly every part of Colorado.

In an interesting exhibit of the progress of the Territory published early in the year in the *Rocky Mountain News*, statistics were given which abundantly demonstrate this fact. The assessors' returns from the different counties aggregated \$31,228,948 for the year 1872 against \$24,112,087, for 1871, showing an increase of \$7,116,860. In 1871, fifteen, out of twenty-one counties, returned 678,859½ acres of improved land; in 1872, fourteen counties return 880,124¾ acres; an increase of 203,265 acres in the less number of counties. The number of

cattle returned in 1871, was 142,178; and in 1872, 242,373, showing an increase of 100,224 head. The number of horses assessed in 1871, was 15,580, and in 1872, 20,381, showing an increase of 4,791 head. The total number of sheep assessed in 1871, was 184,577; and in 1872, 266,015; showing an increase of 81,438. The number of mules assessed in 1872, was 2,390; and of hogs, 4,834. The total number of horses, cattle, sheep, mules, and hogs returned in 1872, was 535,883; as against 352,273 in 1871, showing an increase of 183,610. These assessment returns probably do not show over one-tenth of the number of cattle, sheep, etc., in the Territory. The assessed valuation, already given, is probably two-thirds of the real value and does not include, as must be remembered, the mines, which have never been taxed. The shipments of ore East and to Europe for reduction amounted during 1872 to one hundred car-loads, the quarterly returns showing a steady increase, thus: 26, 37, 45, and 52. The value of this ore was \$560,000, and the total bullion product of the year was \$2,295.40. In every other department similar progress was made.

Such a growth as is thus exhibited by the Territory of Colorado is almost unparalleled, and indicates, unmistakably, the future which is in store for the whole of the Rocky Mountain Section.

Both by geographical position and by the magnitude and variety of its resources, this Section is marked out as the home of a vast and enterprising population.

Overlapping of necessity the Great Plains, which as yet offer little or no invitation to the settler, the tide of emigration, which is ever setting westward, must roll its waves upon the rich strip of country lying at the base of the mountains, and, recoiling from those mountains, must double back upon itself, and accumulate along their base, making it one of the most thickly settled sections in the world. Here, indeed, seems to be the West, the extreme West, the goal to which so large a portion of the human family is continually pressing; for here is the ridge and crown of the American Continent, and up the Pacific Slope are already coming the children of Asia as the children of Europe have for years

past been making their way higher and still higher up the Atlantic Slope. In a few years, the whole of this long plateau between the mountains and the plains, extending for hundreds of miles from North to South, will be thickly settled by people gathered together from all parts of the world.

For, while its geographical position thus favors the accumulation of population upon it, it has been endowed with such a richness and variety of the elements of natural wealth as must inevitably foster a rapid growth. In the mountains is an incalculable amount of gold, silver, iron, copper, zinc, lead, etc. Many of the mines already opened are almost fabulous in their richness, and every exploration into hitherto unexplored portions of the Range brings to light new discoveries of similar value. Coal is abundant, promising the establishment of manufactures of all descriptions. There are forests of timber, and limitless quarries of building-stone, lime, and gypsum. The rich valleys at the feet of the mountains yield abundant crops of the finest quality of grain; the "Parks" which are enfolded in their arms are fitted for vast dairy farms; the spreading plains support countless herds of cattle and flocks of sheep. Here, therefore, are all the natural resources for carrying on the great productive industries—Mining, Farming, and Manufacturing—all that can be needed for the employment and support of such a population as its geographical position invites.

NOT BARBARIANS.—Within two weeks a visiting clergyman from the States, prayed in one of our churches "that the Lord would bestow his blessings on this far western country on the borders of civilization." The idea which he seemed to hold was that the people here are in a state of semi-barbarism and are trembling in the balance whether to advance to civilization or turn cannibal. He was but a representative man of a large class. We can tell all such doubting individuals, that we have our daily papers up among the mountains scarcely a stone's throw from the eternal snow banks; and that the thousands of the most wealthy, refined and educated people of the East who annually spend the Summer months on Mount Washington in New Hampshire, never think of the possibility of establishing a daily newspaper upon that high altitude though it is twenty-one hundred and eighty feet farther from heaven than our Georgetown; yet its *Miner* shows its sprightly face on the plains every day in the year. While the Colorado journalist evinces much ability and pluck, the Coloradans are not behind in the commendable spirit of patronizing and supporting home industry and talent; and each contributing success to the other, tend greatly to build up the material resources and extend the intellectual influence of the Territory.—*Denver Times*.

ROUNDING-UP.*

No wonder that the three hundred Utes encamped at the mouth of the Apishapa imagined that their time had come when they beheld advancing up the road, preceding a supply train, a large party of horsemen, a goodly number of whom were clad in blue overcoats! No wonder that they instantly dispatched a party of peace commissioners to interview this savage-looking outfit, and to learn what meant this sudden uprising of the chivalry of the Arkansas Valley. And how serene they must have felt to find that we were not on the hunt of Utes, but of the next thing to them—Texas steers.

I met a parson who told me that those round-uppers were not near such hard cases as they looked. Said he:

"I rode boldly into their camp below here, about noon, and was immediately greeted with—"

"Halloa, now, if there ain't the parson. Alight from your caballo, señor, and shake."

"And while I was conversing with the gentleman who gave me this cordial greeting, from away off in another part of the camp—"

"I say, parson, come over here and get your dinner."

"And, of course, I went."

"Now," said he, "you've been out here in Colorado long enough to dispense with all formality on such an occasion as this, so help yourself to what is set before you, asking no question for conscience sake."

"What," I asked, "did you have for dinner?"

"Nicely fried ham and potatoes in one skillet, stewed fruit in another, light white shortcake in another, with golden drip to sop it in, and the 'powerfulest' cup of coffee I have drunk in an age. And, whereas these round-uppers invited me to accompany them to Sand Creek, and preach for them next Sabbath evening, I have resolved to do it."

We started from Rocky Ford Saturday morn-

ing. It was a beautiful day, and the broad, billowy, grassy plains swept away before us in sunny beauty. Our little supply train rolled along with a lazy grace that was perfectly fascinating, and each gallant knight of the Texas Steer cavalry looked and acted as if intoxicated with the salubrious air of Southern Colorado. Of course their tongues were loosened, and one group animatedly and amusingly discussed points of theology, another geological formations, another mining experiences, another stock, and still another, like the gallant knights they were, discussed the girls. That young man there, with buffalo breeches and a broad belt, to which two innocent-looking revolvers are attached, is having a good time all to himself. He is a singer, and his snatches of sentimental songs—interspersed with love ditties—finally are topped off with

"I'm going home to die no more."

That tall, loosely-constructed fellow, with sandy hair and a sandy goatee, and a pleasant face, and a mild blue eye, and riding a large gray mule—he is a philosopher, enjoys life hugely, wants to "see length of days," and wonders whether late camp suppers—bacon, beans, strong coffee, etc.—are not calculated to wear out the stomach sooner than otherwise. This is the merry side; now here is the sad:

I fall in with a friend, and as we ride along together, the conversation turns upon the recent melancholy wreck of the Atlantic. His sister was among those who perished upon that ill-fated vessel. Her husband could have saved his life, and she entreated him by all means to do so, but he refused to leave her, and side by side they perished. My friend took from his memorandum book, and reverently and silently handed to me the photographs of this noble, handsome-looking couple, and as I gazed upon them the thought of their sad death lent a saintly beauty to their features. For ever fragrant and blessed be their memories.

I hear a pistol-shot, and looking off to the right, perceive a solitary horseman has shot a jack-rabbit. After a little season two or three

* Correspondence of the *Daily Pueblo Chieftain*.

antelopes are descried, and away dashes a sharp-shooter. He fails to get within a reasonably fatal range, and at last blazing away at a venture, scares them like everything, and away they go

Like sails on the seas,
When fanned by the breezes.

Halloa! Yonder on the bluff is a dismounted Ute; he has killed an antelope and is skinning it; let's go for him, boys. And off dash three or four reckless horsemen like the wind. When they reach the poor Ute, they find him so petrified with astonishment that he cannot speak or move, and our gallant knights moved with pity relent, and depart without assassinating him.

Presently there is quite a commotion in our cavalry squad; they separate in confusion from right to left; out dash a couple of wild herders on a horse race. "Go it, p'inters!" "I'll bet on the mule!" and in the midst of a general hurrah, the race is run, the victory won, and all for fun.

Toward sundown we camp at Dr. Tuttle's lonely stock rancho on Sand Creek. The camp fires are cheerfully blazing at intervals upon the creek, and all around them is a scene of beautiful activity and elegant leisure. Some are cooking, others "hobbling," others feeding, others lounging; when suddenly all are looking—excitement kindles, wagons are mounted, corral posts scaled, the housetop occupied, and all eyes strained.

A solitary horse, detached from the wild herd that haunts this range, is galloping along the mile-distant bluff riderless.

"He lopes as if he was tired, boys. I think we can overtake him and 'rope' him."

Three of our cavalry men are soon mounted, and off. On, on, on they go. Our boys are gaining upon him! The wild horse quickens his pace! Our boys quicken their pace! A race for freedom! Wild horse, I hope you'll beat. One of our horsemen—a dashing rider and splendid roper—is within sixty yards of him. Just then his horse sticks his foot in a dog hole, makes a prairie plow of his nose, nearly breaks his leg, and sends his rider headlong in the sand with the force of a pile-driver.

The boys give up and return. The wild horse

arches his neck, erects his tail, blows his trumpet, and shouts (did not Balaam's mule speak?) "Thanks to my speed and bottom, I am still free."

Sabbath afternoon, we camped upon Horse Creek. While the shadows of the setting sun were gathering on the peaceful face of the solemn plains, the Texas Steer cavalry were gathering at Captain Holly's camp headquarters, to hear the parson who had accompanied them lecture.

The Captain—rather an aristocratic notion—spread several blankets upon the grassy bank, but not enough for this gypsy band, many of whom contented themselves with nature's faded carpet.

Mr. Cranmer's outfit, from the eastern wing of the camp, was the last to arrive. Mr. C. and Major George seemed struck with the novelty of the situation, and dropping on their knees upon the bank, cast a pleasant smile at the funny-looking parson standing near the group, with whom they were as yet unacquainted. Suddenly Mr. C. turned to one of his men and asked:

"Where's the parson?"

"He'll be here, presently."

"What," exclaimed Captain Ripley, "have you got a live parson in your outfit?"

"Certainly," said Cranmer, "a colored gentleman;" and with that we smiled—some out loud.

"Friends, you were all accustomed, in other days and other places, to sing the familiar songs of Zion. Your harps, however, for years have mournfully hung upon the willows. Attune them anew to the familiar song

"When I can read my title clear."

They all arose with uncovered heads, and, as it proved, with retentive memories and strong voices, and sang through the sweet, familiar hymn. Horse Creek heard for the first time, with murmurs of applause, a song of praise from the voices of men. After a brief prayer, the sermon. Close, reverent, earnest attention was given to the speaker, from the beginning of his remarks to the close. From a cloudless sky the gentle moon and stars looked down upon a group of rough, hardy pioneers, as gentle now as they, and as beautiful in their gentleness.

The doxology, the benediction, and then "to your tents, O Israel."

Having arrived on Steele's Fork, now comes the tug of war. The captain of the round-up divides his men into little squads, and sends them out to prospect for cattle, within a given area, in every direction. After waiting several hours at camp, I was pleased to see one party after another arriving with little bands of cattle. At last all had arrived, and the round-up was completed.

I had now for my contemplation and amusement a large herd of cattle surrounded by horse-men. Such cow-bawling, calf-crying uproar I never heard before. And such disorderly steers—pushing, jamming, fighting, trying to climb over each other, and to sneak out between the horse-men—they should have been ashamed of themselves. And such a variety of brands—diamonds, hearts, spades, clubs, circles, horse-shoes, Texas hieroglyphics, all kinds of letters in all kinds of shapes—sideways, upside-down, slanting-dicular, several letters run into one, stars and stripes, squares, triangles, right-angle triangles, names of one syllable—Tom, Dick, Luke, Todd—winecups, brandy flasks, Chinese puzzles, brands on the right hip, brands on the left hip, brands on the belly, dew-lapped, ear slit, etc. Poor things,

Man's inhumanity to steers,
Makes countless thousands mourn.

"Sail in there, you fellows that have the most cattle in the herd, and cut 'em out."

And in they sail, while the rest stand guard. The horseman gets the steer he wants to cut out in the outer circle of the herd, and then by a sudden dash detaches him from the rest—if he can. A steer you wanted to stay in, gets out, and you must get him back—if you can.

You that know something about Texas steers can imagine what a lively game this cutting out affair is. When they get right down to close work, the cavalry-men, who are dodging around through the herd, keep it in motion—rushing, pushing, jamming, swinging around the circle, trying to escape; and what with cows bawling, calves crying and men yelling and swearing, it is a perfect pandemonium in the ring; while outside of the ring, horsemen are flying in every direction after Texas steers—some trying to get their steers

back into the herd, and others trying to keep theirs out.

Funny incidents are constantly occurring. There's a fellow chasing a steer, and about to turn him, when the steer stops with a jerk, and the horse sails on and the fellow gets mad. Yonder is another chap who is not a trained rider, and his stirrups are too long, but his horse is well-trained, and—see, he is about turning a steer. The steer stops, horse stops—but the man doesn't; he goes on.

I hear a crash, as if something had dropped, and looking around, behold Major George and his horse spread out over the surface of the earth.

Yonder horseman is on the lasso; he rides swiftly toward the brute; swinging his loop, and watching his chance, he sends the rope slap over the animal's horns, holds back, rope slips from saddle horn, rider chases after it, and on a swift run, throws himself on his horse's side, reaches down, grasps his lariat, and seats himself in triumph. Shortly after, another young man tries the same feat; he lets himself down, grasps the rope, tries to get back, saddle turns, young man wriggles out and goes sprawling.

There's a steer whose Texan blood's up, and he won't move—whip, curse or scare don't move him. But he must be moved, and three horse-men, attaching a rope to each horn, and another to his tail, drag him along by inches. Brave steer, you are more plucky than wise.

Gentlemen, all this may be fun to you, but it's death on ponies, grief to cows, and hard on calves.

BACH.

NOT ALL GOLD.—Of course, there is much to be done here by earnest, practical, self-denying ability, even without capital; so there is everywhere. But the fact remains that it is just about as hard to start a successful business here as in the East, and that all talk about El Dorado, or the Valley of Diamonds, in this connection, is sheer nonsense. Indeed, the unsuspecting stranger is fortunate if he assist not at some Polonius feast, not where he eats, but where he is eaten; for Colorado Roes are birds of excellent appetite, and quite as apt to view green and tender travelers in the light of providential mutton-chops sent for their benefit, as to drop be-diamonded beefsteaks into alien laps. Then the prudent one, who escapes but fails to find the promised gems, generally goes back east, and declares that of all liars, that Rocky Mountain Sinbad is the most reckless, and that the song of the Sierra Siren is nothing but a hum-hum. So they keep the land from being solidly settled in the natural way.—*Denver Mirror*.

MISCELLANEOUS SELECTIONS.

DENVER.—Volumes have been devoted to this frontier city at the foot of the mountains, with its wonderful enterprise and western energy and pluck; its curious cosmopolitan population, congregated from all quarters of the globe; its queer opposites—its roughness and refinement—its consumptive culture from the East in search of health, its rough mining votaries of wealth, its savage visitors from the home of the red-man near by, and its Mongolian residents, with their pig-tails, almond-shaped eyes, and *petite* forms, who wash clothes (not themselves) for a living. Civilization predominates, of course. There are a fair share of churches and a four-story school-building; women shapely and tall, the rarefied atmosphere allowing them to shoot up to an immense altitude—their heads laden with hair in *cheveux de frise* style—their hats as small, their gloves as tight, their dresses, laces, and shawls as costly, and as fashionable, as those worn by their sisters in the East, who are supposed to reside within the very precincts of fashion. The piano sounds where the war-whoop was heard a score of years ago, and the steam-whistle has frightened the native citizens of the forest and plain—the bear, the buffalo, the antelope, and the coyote—from the ancient homes of their progenitors. The Rocky Mountain range in the distance furnishes ever-changing scenery for the inhabitants. There is the making of a fine city right here. It will grow with the mines on which its growth depends; and, though I am not much of a seer, I will venture to predict that the next generation will find 50,000 inhabitants around this very spot.—“SUL” in *Chicago Tribune*.

SCHOOLS AND CHURCHES.—Our public school system will compare favorably with that of any Eastern State. The last report of the Superintendent of Public Instruction to the Legislative Assembly furnishes a gratifying exhibit of the successful working of our public school system. In addition to the common schools, several educational institutions of an advanced character are already well established, and thorough academic and collegiate courses can be pursued if desired. All the religious denominations are well represented. In every prominent city and village of the Territory, and even in many of the mining camps, places of worship have been erected. People from the East, who estimate religious privileges will find abundant facilities for church worship. People who imagine that Colorado is inhabited by a half-civilized population, will find themselves agreeably mistaken. The rough and desperate element has been thoroughly rooted out; and in its place we have communities of enterprising, ambitious and orderly citizens, around whom are clustered all the refining and elevating influences of the family circle. Theatrical entertainments, concerts, lectures, festivals, halls and other amusements, are quite as frequent and as creditably managed as in other regions of like population.—*Pueblo People*.

FIGURES AND FACTS.—The Hon. J. B. Chaffee has favored us with the last census report which contains a vast amount of information, and much that is of peculiar interest to residents and others interested in Colorado. Reports like this, which take two or three years to complete have no value as indicating the wealth, population and development of such growing territories as Colorado, and yet by comparisons, they are made to show the wonderful rapidity of their growth. For instance, the population of Denver is given at a little over 4,000, when to-day the real figures could not make it much less than 20,000. A geographical map which accompanies one volume shows no coal deposits west of eastern Kansas. Since work on the Reports commenced, it has been ascertained that extensive coal fields exist along the eastern base of the Rocky Mountains from

Wyoming southward, embracing the lignites of Colorado, and the anthracite of New Mexico. Cities and towns, which had no existence then, now number their inhabitants by the thousand. This comparison of present facts with the official figures of three years ago, gives a tinge of the marvelous to the development of this region, and makes the latest published reports relating to it, appear antiquated and unreliable. Those who come to Colorado strangers fail to realize that nearly all the progress they see made, can be the work of less than half-a-dozen years. The numbering of the houses in Denver having just been completed, there is found to be about as many houses now as there were people in 1870, or upwards of 4,000, one-fourth of which were built last year.—*Rocky Mountain Leader*.

STOCK RAISING IN COLORADO.—Colorado is fast proving itself an excellent grazing country. This great pasture land of the buffalo, elk, antelope and deer, is now being filled with herds of Texas cattle. The valleys of the Bijou, Kiowa, Rio Grande, the South Platte and its tributaries, Cache La Poudre and Big Thompson, and last, but not least, the Valley of the Arkansas, offer better grazing than the best parts of Kansas; for cattle can subsist there the year round without shelter, grain, or fodder of any kind, the summer-cured grasses being so nutritious for winter feed, that herds lean in the fall have subsisted on them, come out fat in the spring, and been taken to St. Louis and Chicago and sold on the market there as stall-fed beef. In the summer, cattle are grazed on the high-plateaus, 8,000 feet above the sea level, and in winter are driven to the lower valleys. Blooded stock have been introduced and the specimens of cattle sometimes seen grazing on the plains would do credit to an Illinois State Fair. It is claimed that cattle can be raised here in herds of from 500 to 1,000, to four-year-olds at an average cost of only \$1.50 per head per year, the only expense being for herdsmen and occasional losses by Indians. Cattle brought here from Texas increase twenty per cent. in size and weight during a single year, and the natural increase of sheep is nearly a hundred per cent.—*Rural New-Yorker*.

THE UTES.—A correspondent of the *St. Louis Times* has the following to say concerning the number of the Utes and the extent of their reservation: The reservation which the treaty of 1868 set apart for them is 209 miles long by 108.5 miles wide, containing 22,676 square miles, or in acres, 14,511,640. Altogether there are about five thousand Ute Indians, although the government officials estimate it as much larger, and exaggerate in every instance for reasons best known to themselves. Let us compare the figures: Taking the annual report of the Commissioner of Indian affairs for 1871, we find the Ta-huache band estimated at 3,000, when 1,200 will be a fairer and more accurate count. The Tanpa and Uintah hands number about 800, and are supposed to be at the White River Agency, in the northern parts of the reservation. The Monache hand at the Cimarron agency number 645. The Wiminuche band are the only Utes living in the vicinity of the mines. They number about 650. The Capote hand number about 250 and live in the vicinity of Tierra Amarilla, New Mexico, where the agency for both the Wiminuche and Capote bands is located. The above comprises all of the Utes included in the Ute treaty of November 6, 1868, and take it at as large an estimate as the officials make it, 8,000, this would give each Indian, man, woman and child, 1,814 acres of land. If one could get all of the Indians together upon the reservation and let them be counted accurately they would not foot up more than 5,000 souls, which would give to each of them 3,902 acres of land.

SUMMARY OF NEWS.

A new Methodist Church is being built at Fort Collins, and a temporary building is to be erected, for the accommodation of the Presbyterians, on lots which have been set aside for that purpose.

A new planing mill is being built at Canon City.

The Canon City *Times* calls attention to the fact that there is much need and abundant local facilities there for the establishment of a pail and tub factory. It says that the capital required would only be about \$4,000.

The Denver Horse Railroad is being extended.

Henry Ward Beecher has been advised by his physician to spend the summer in Colorado. He is a victim of annual hay fever.

Bishop Randall will lay the corner-stone of an Episcopal Church at Colorado Springs, on the 12th of July. The building will be of stone, and of gothic architecture.

The Colorado Springs Brick Company have burnt their first kiln of 100,000 brick.

The Catholics propose to erect two spacious Hospitals in the Territory, one in Denver and the other at Manitou. They also propose to build a church and a school at the latter place.

There has been considerable rainfall in nearly all parts of the Territory during the month of June.

Work is to be commenced at once on a \$15,000 School-House at Colorado Springs.

Manitou is well filled with visitors.

Reports that the Utes have been stealing horses and cattle and committing other depredations in the Southern and Western parts of the Territory are authoritatively contradicted.

The Denver Hotels are crowded.

A new road has been built from Colorado Springs to Manitou via the Garden of the Gods.

The large influx of immigrants into the Territory of late has caused the supply of labor to be in excess of the demand. The opening up of mining operations is, however, making employment for a large number.

More immigrants reached Colorado in May than ever before in thirty consecutive days.

The Secretary of War, at the request of Professor Hayden, has ordered a Signal Station to be established on the summit of Pike's Peak.

The Evans bank are arranging to erect a fine building this summer to accommodate their business.

The Episcopal society of Central, have let the contract for a brick church, 35x65, with tower, to be completed by November 1st.

The fire which originated some weeks ago in the mountain forests of New Mexico is still unextinguished. The destruction of timber is enormous.

Heavy rains have fallen in all parts of New Mexico, recently, and all fears of a drought are now dissipated.

Senator Wright, of Iowa, is making an extended tour through Colorado, with a view to informing himself about the Territory.

Idaho has been admitted as a town.

A German church edifice is being built in Denver.

Several parties of explorers, under the direction of Professor Hayden, are now at work amongst the mountains.

Mr. R. W. Raymond, Commissioner of Mining Statistics, and editor of the *Mining and Engineering Journal*, has been down in New Mexico last month, and has spent some time in the Socorro region, in a personal examination of the vast argentiferous resources of that section. He speaks encouragingly of New Mexico, and thinks that with such wealth of treasure lying dormant, it cannot be doubted that, by the increased facilities of transportation and access to the mines soon to be furnished by the railroads pointing thither, the production of the precious metals in New Mexico must eventually be very great.

The Trustees of the Colorado Industrial Association have decided to issue gold medals, valued at \$100; silver medals worth \$25; diplomas \$10; certificates \$5, and will issue ten thousand dollars' worth at the next Fair. This will be distributed as follows: horses, \$1,500; cattle, \$1,500; sheep, \$500; swine, \$150; poultry, \$100; agriculture and horticulture, \$1,000; minerals, \$1,000; agricultural implements, wagons, carriages, \$1,000; manufactures, textile fabrics, clothing, shoes, hats, furs, printing, household goods, furniture, jewelry, dentistry, etc., \$1,000; pantry and dairy products and confectionery, \$500; on the track, \$1,000.

The Pueblo *People* says that in the Wet Mountain Range directly west of Pueblo, distant fifty miles, are pleasant places for summer recreation. Mineral springs of hot and cold water for the invalid; abundant trout in the mountain streams and deer, bear, grouse and other game, large and small, for the sportsman. The mountain scenery is grand; small parks of more than ordinary beauty frequently open out among the mountains. During July and August wild berries—raspberries, strawberries, currants, etc.—of delicious flavor grow in great abundance among the foothills. No locality combining so many of the elements that make a mountain trip a pleasure can be found at so convenient a distance from the city as that afforded by the Wet Mountain Range. It is in this range where the recent discoveries of silver have been made—near the headwaters of the Hardacre, a creek flowing into the Arkansas.

The Pueblo *Chieftain* says the success of the Central Colorado Improvement Company in preserving the trees set out in South Pueblo, is very encouraging. Not more than five per cent. of the trees have died, while those living are starting out limbs and leaves at a fine rate. The water in the ditch is running freely, and branch canals along all the streets are carrying water to the trees without difficulty. Early this fall it is the intention of the company to commence work on the reservoir, which will be located in the depression lying two-and-a-half-miles back of the company's office, near the bluff. This reservoir will embrace at least one hundred and sixty acres, and will hold an immense amount of water. The lay of the ground is such that the reservoir will be forty feet higher than the level of the ground at the office, and thus there will be no difficulty in running water into the highest houses that may be erected. The average depth will be twenty-one feet, and the supply will be drawn from the St. Charles. The surveyor's estimates for the work upon the reservoir and feeding canal amount to only a little over \$3,000.

MINING INTELLIGENCE.

Reports are favorable from "over the range," and gulch miners are hard at work around Montezuma and St. Johns.

The crushing mills of Georgetown are busily engaged on ores for shipment.

The Greenhorn range of mountains, fifty miles from Pueblo, are attracting attention as extensively mineral bearing.

The gold shipments by the Rocky Mountain National Bank of Central for May, amounted to \$425,056.

The "Idaho," in the Caribou District, has been sold for \$150,000.

The Colorado Central lode, at Georgetown, furnished a thousand dollars worth of ore per day during May.

The Bobtail Tunnel, near Central, is 1,150 feet long, and has cost \$40,000. It is owned by an English company.

The snow in the neighborhood of Caribou is disappearing rapidly. Surface water has been causing considerable trouble in some of the mines.

The existence of copper ores in Jefferson County, in quantities sufficiently large to pay for working, has induced a company to commence the erection of copper works at Golden.

Gulch mining in North Clear Creek promises to be lively this season. All the claim owners are about ready to commence operations.

Collum's Concentrating Works at Idaho are nearly completed, and they expect to start up within four or five weeks.

Among the paying lodes that are now being worked at Georgetown are the Terrible, Hercules, Main, Colorado Central, Equator, Saco, Sickles, John Bull, and the Marshall and Baltimore tunnels.

A recent visitor to Silver City, New Mexico, seems to think the place unrivaled in the extent, variety, and richness of the mines, which comprise all the metals from gold and silver to iron and lead. The town, scarcely more than a year old, already numbers a population of 1,200, and is substantially built of brick and stone.

The *Central Register*, in an article on the Boston and Colorado Smelting Works, says that during the period from April, 1867, to January 1st, 1873, omitting the first six months consumed in getting started, these three furnaces have reduced to copper matte, 33,000 tons of ore from the mines of Gilpin and contiguous districts. Last year 10,000 tons were treated. The daily consumption is thirty tons. Of the 33,000 tons purchased, the average purchase price is \$75, the ores containing an average of \$117 per ton, gold and silver, estimated at the ruling rate of currency.

The mines in the Hardscrabble District are now attracting considerable attention and promise to give employment to a large number of miners. The *Canon City Times* says the returns of two assays of ore from the Senator Lode show a richness which is very gratifying. A sample of picked ore gave the extraordinary yield of \$7,605 per ton, and an average specimen of \$1,516.58. These assays were made by Professor Schirmer, of the mint at Denver, and may be therefore considered reliable. The lode has a crevice six feet in width and now carries one foot of solid ore, with more or less scattered throughout the entire crevice. In the same district are numberless other lodes, which promise equally as well as this, but have not been so fully developed.

The *Central Register* says that the Mining Company Nederland, present owners of the great Caribou, have made their first shipment of silver bricks, value \$7,500, from a "run" of 3½ days. Their mill was stopped for repairs, recently, but it is again in fine working order, in fact, promises to work better than ever before. This will henceforth greatly facilitate the regular shipment of bullion. A large quantity of rich ore has accumulated, and will shortly be turned into silver bricks and "buttons" of mammoth dimensions.

The Leavitt mine, in Gilpin County, under the foremanship of H. Neikirk, is now being worked more vigorously than ever before. Fifty tons of ore are raised per day, and the amount will be increased as soon as the new shaft, in which it is the intention to put a cage, shall have been opened. A level is being worked at the depth of 250 feet, where there is a five foot crevice of good paying ore. On a level at a depth of 180 feet, there is a crevice two feet nine inches wide, of solid copper and iron pyrites, the best of smelting ore. Bela Buell is at work putting the stamps and machinery into his new mill, which, when completed, will enable him to work the mine at a yet greater profit.

A company lately organized in Chicago has leased the Horsefall lode in Boulder County. The parties who formerly worked this lode supposed they were in cap and abandoned the mine, because the ore would not pay in stamp mills. The material which they threw away on the dump pile as worthless is found to be extremely rich in tellurium and petzite, assays from it going as high as \$10,000 per ton.

A mammoth tunnel has been commenced, which is to cut through the Rocky Mountains, starting about a mile below Black Hawk, in Gilpin County, Colorado, and running into Middle Park. It will be twenty feet wide by twelve feet high, and will pass under Gilson Gulch, and to the Northwest. Its estimated cost is to be \$5,000,000. The capital is to be furnished by English capitalists, and the work is to be under the charge of George W. Wheaton, Esq.

The *Fairplay Sentinel* estimates the bullion product of Park County for the present year, at \$2,000,000; and that of Lake, Summit and Saguache counties combined, at \$1,500,000.

So many mines are now being worked in Gilpin County, that miners are in great demand.

Mining above timber-line (that is, over 11,000 feet high) is now carried on, Winter as well as Summer, in some parts of the Territory.

The sale of the Caribou mine has made things very lively in the Grand Island District. An "Old Miner" expresses his opinion that there will be mines opened there in less than twelve months that will be worth more money than the Caribou is to-day. He mentions as lodes which promise to be among the number, the Fourth of July, the Sherman Lode, and the property of the Bay-State and Colorado Mining Company.

The President's order for the removal of the Miners from the San Juan country having been rescinded, there is now a large influx of men into that district.

The Hoosier lode, in Boulder County, is said to be bonded to Shaffenburg & Co., of Denver, for two years for \$100,000.

The Laramie County *Express* gives currency and credit to the reports of rich gold and silver discoveries in the vicinity of La Porte and Fort Collins.

Several new discoveries are reported at Mount Lincoln.

Alex. Cameron has imported forty-five pig-tailed Celestials for his gulch mine. He says they start in well, and are rushing a good deal of pay dirt into the sluices. He is well satisfied with the experiment thus far, and hopes to realize handsomely from the results of "Chinese cheap labor."

One is being received at the Golden Smelting Works (says the *Globe*) at the rate of two or three car-loads per day, chiefly from Gilpin County. The indications are that a large amount will be shipped to this point during the season—more than their present facilities can accommodate—and in anticipation of this they will soon enlarge their building and double their working force.

AGRICULTURE, STOCK AND WOOL GROWING, ETC.

The Denver *Mirror* gives the following summary of stock affairs:

The condition of live stock is very promising. The losses during the past winter from storms, exposure and straying, are comparatively small, while the thieving that in past years vexed the souls and pockets of Colorado herdsmen, has been in a great measure suppressed. In consequence of the early frosts last fall, the grass on the Plains was partially killed before it "cured" naturally on the roots. Of course the winter feed was not as good as usual. Cattle are thinner in consequence, and sales are not as brisk as could be desired, either of beef or stock cattle. But a large demand for "feeders" is anticipated during the summer and early autumn, if the corn crop of the Western States should prove a success. The quantity of cattle held for sale in Colorado is about as large as usual, and we are advised by competent authority that a number of Eastern stockmen are intending to locate permanently in the Territory, bringing not only experience, but a large amount of capital. The transactions in sheep have been very considerable, principally in Southern Colorado, several large purchases of sheep and ranches having been made by parties from California. The demand for horses continues unabated, the trade occupying the time and capital of six or eight of our best business men, and is evidently remunerative. The increase of blooded males in all classes of horned cattle, horses and sheep, during the last three years, is remarkable. These additions comprise some of the best animals from Eastern breeding establishments, and form a special guaranty that the great stock-growing industries of the pastoral region of the Rocky Mountains will be and is being developed by capital, skill and experience.

A stockman in Southern Colorado, writing to a friend who wished to invest in sheep, advised him to put his money into cattle, which are low, and hold them for a rise in beef and fall in sheep; then, if deemed advisable, sell the former and invest in the latter—say at the end of the year. Cattle, he says, are bound to rise, and sheep prices must topple. The prices at which sheep are held are disproportionate to the prices of wool. The result of this state of facts is plain to be seen.

A visit to Mr. J. B. Bannister's ranch on the Fountain a day or two ago, found the proprietor very extensively engaged in the gardening business, by which he informed us that he can realize as high as \$3,000 out of one acre of ground. On interrogating Mr. B. as to why more persons did not engage in this immensely lucrative business, he replied, to use his own words: "Well, these natives were born very tired, and they haven't got rested yet." This is a little lecture of itself, and some of our tired neighbors might well profit by it.—*Chieftain*.

Arrangements are expected to be made shortly by the Colorado Industrial Association and the Rocky Mountain Poultry Association, by which inducements will be held out for the holding of a Poultry Fair, under the auspices of the latter society, in connection with the next Territorial Fair.

Colorado has two publications specially devoted to Agriculture, Stock Growing, etc. One is *The Colorado Farmer* and the other the *Colorado Agriculturist and Stock Journal*.

The *Kansas City Cattle Trail* says that Colorado is the best grazing country under the sun.

Immigrants from Missouri are moving into the agricultural country which surrounds the San Juan District.

A Poultry Association has been formed, to be known as the "Rocky Mountain Poultry Association."

The *Chieftain* says: An investment of \$5,000 in a sheep ranch in Southern Colorado, will insure the gentleman making the venture, a fortune in ten years, and will secure him in the mean time, a sound, robust, healthy constitution, which will enable him to enjoy the fruits of his ventures and labors rationally, even after old age has claimed him as his own.

Miss Middy Morgan, writing in the *Turf, Field, and Farm*, says: The livery stables of Denver are a feature peculiar to the city, so orderly and well kept are they, and so excellent are the livery horses, although as yet the Territory cannot supply even a minimum of the horses needed for its yearly consumption. Last year \$1,500,000 went out of the Territory to buy horses. The cost of raising horses under the old system was almost nothing, a four-year-old stood his owner in about \$10, and would sell in the Eastern market for from \$100 to \$200. The taste in horsemanship is good in Denver. The poor stock raised in the country is sold out of it, while good horses are daily brought in. I wish, for the advantage of all concerned, that several of the valuable studs now located in this and other Eastern States were transferred to Kansas and Colorado. Good horses could be raised there for one-tenth what it costs to raise bad ones here. Labor is at the same rate as with us, only it is of a far better class. The climate is absolutely faultless, and the soil prolific as the Delta of the Nile.

An important meeting of Farmers and others was recently held in Denver, under the presidency of Governor Elbert, for the purpose of devising means for the carrying out of an extensive system of irrigation upon the public lands. It was resolved that the aid of Congress should be invoked in the matter. The scheme propounded was, in brief, that the Territory should issue its bonds for the construction of large irrigating canals, and that half the proceeds derived from the sale of public lands benefited by those canals should be given to the Territory to be applied to the payment of the principal and interest of said bonds; such public lands to remain open to the provisions of the Homestead and Pre-emption Acts; when pre-empted to be sold at \$2.50, when taken under the Homestead Acts, the Territory to receive from the Government (out of the funds derived from the sale of pre-emption lands) at the rate of \$1.25 per acre.—It was resolved that a more comprehensive meeting of delegates from all States and Territories interested in the subject of irrigation should be held in the Fall. —In connection with this, it may be stated that Dr. H. Latham, Surveyor-General of Wyoming, has gone to Salt Lake, to get at the state of feeling among the Mormons, who know more of practical irrigation than any people in the West. He is also obtaining an accurate measurement of the amount of water in all the principal streams in Wyoming and Northern Colorado and the extent of country which needs to be and can be irrigated from them.

RAILWAY INTELLIGENCE.

The following officers and directors for the Atchison, Topeka and Santa Fé Railway, have been elected for the ensuing year: Henry Strong, of Chicago, President, in place of Hon. Ginery Twichell, of Boston; Thomas Nicholson, of Boston, Vice President, in place of Mr. Burr, of same city; and A. E. Touzalin, Land Commissioner, in place of D. I. Lakin, resigned.

The Locomotive Report of the Kansas Pacific Railway for April, of all divisions, shows the number of miles run by passenger engines to have been 69,943; freight, 89,841; miscellaneous, 41,855; making total mileage, 192,639. The number of miles run to one ton of coal was 35.77, to one quart of oil, 24.40. The cost of wages of engineers and firemen was 05.02; cleaning and watching engines, 01.23; fuel, 11.36; repair, 05.18; stores, 00.62; total cost per mile run 24.31. Cost of wood per cord, \$4; coal, \$4 per ton.

The *Golden Globe* says that the business of the Julesburg extension of the Colorado Central Railway is very satisfactory to the management, and every day increasing. The freight and passenger traffic is more than double their most sanguine expectations, and an enlargement of facilities is talked of.

Cattle Yards are being built at Longmont in connection with the Julesburg Road.

The Branch of the Colorado Central to Georgetown is to be completed by the 1st of October.

The reform inaugurated by the Denver and Rio Grande Railroad Company, and adopted by the Union Pacific and others, in the abolition of the free pass system, bids fair to become popular and spread over the country.

The *Golden Transcript* says that three new towns are being laid out on the line of the Golden and Julesburg Railway, within the limits of Boulder County. One will be near Left Hand, at the nearest and most accessible point to Ward District and Upper St. Vrain. Another will be near the property of Rev. A. R. Day, in the vicinity of Valmont, and will probably be known as Lakeside, while the third will rest on William Davidson's farm between Coal Creek and Boulder Creek.

The *Pueblo People* gives the following particulars concerning the new depot of the Denver and Rio Grande Railway at that point: The Passenger and Freight Depot of the Denver and Rio Grande Railway which has been in process of erection for some time, is rapidly approaching completion, and fully deserves the somewhat extended notice given in this article. The building is of brick, on solid stone foundations, and is one hundred by forty feet on the clear. The east end is devoted to the waiting room and ticket office, with an east entrance as well as south. The freight room is forty by eighty feet, with six large double entrances, giving ample facilities for the transaction of the immense freight business of the company at this point. The cornice is six feet in width, relieving the building of any bare, factory-like appearance, besides shielding the windows from the direct rays of the sun. The roof, which is a building in itself, is supported by nine trusses with iron stays and girders. The walls of the depot are twenty inches thick, with panels in the *renaissance* style of architecture, and contain one hundred and ten thousand bricks. The entire cost of the building when completed will be \$12,000, and its size and beauty will make it second to no building of the kind in the Territory.

The St. Joe and Denver Railway is in a bad fix.

The *Evans Journal* says that the Boulder Valley road is certain to be completed from Erie to Boulder City, the iron having been purchased in St. Louis.

The car-works of the Colorado Central, at Golden, employ from 100 to 150 men.

Grading has been commenced on the extension of the Denver and Rio Grande Railway southward from Pueblo, and the work is to be pushed forward vigorously.

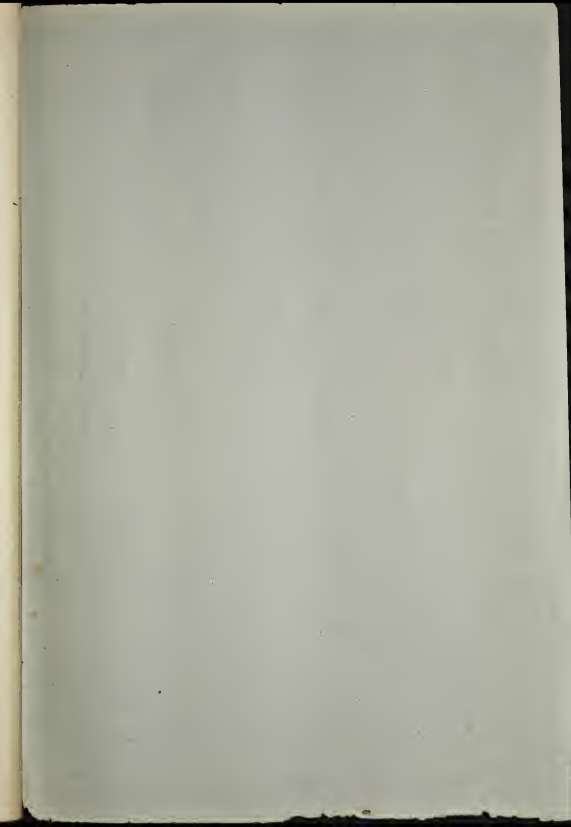
The Atchison, Topeka & Santa Fé Railway Company have arranged to ship freight over the Kansas Pacific from Topeka.

Iron for the Boulder Valley road has begun to arrive by the Kansas Pacific, and the iron for the entire route under contract will be forwarded regularly until the work shall have been completed.

The Denver, Georgetown and Utah Railway scheme having been abandoned, it was resolved, at a meeting of the Denver Board of Trade, to petition the Commissioners of Arapahoe County to order an election for the transference of the bonds voted in aid of that enterprise to the Denver, South Park and Pacific Railway, and for the increase of the amount from \$200,000 to \$300,000. The petition, however, was subsequently withdrawn, and the matter will probably come up in another form.

The first annual Report of the Denver and Rio Grande Railway shows that the earnings from transportation during the year, exclusive of construction material, was \$281,400.29; operating expenses, for the same, \$175,206.32; leaving a net balance of \$106,193.97. Of the gross earnings, \$172,102.23 was from freight; \$134,391.50 from passengers; and \$1,045.03 from miscellaneous sources. The freight carried was an average of 152 tons per day, carried an average distance of 61 miles. The number of paying passengers was 25,168, exclusive of 292,000 miles of transportation on free passes. The business for the first three months of 1873 was 45 1/2 per cent. over that of the same quarter in 1872, while the business of March amounted to 60 per cent. over March 1872.

The Denver and Rio Grande Railway Company are making large additions to their Rolling-Stock. Two new Baggage Cars, made at the Company's Shops at Denver, have just been put upon the road. The dimensions of these are almost as large as those on a Broad Gauge Road, being forty feet in length from out to out, with a body thirty-five feet long, by eight feet wide, and six feet high to the square. One end is fitted up for Baggage, the other for Express matter, and in the centre is a Mail apartment, with pigeon-holes and tables suitable for making the distribution. Two new Passenger Coaches—the "Trinidad" and the "Taos"—have been received from the well-known works of the Jackson and Sharp Company, Wilmington, Del., and another is nearly completed. It is expected that one of the celebrated "Fairlie" Engines, just received from England, and now in the Company's Shops being put up for use, will be running early in July; and M. Baird & Co., of Philadelphia, are building for the Company an Engine with eight connected driving-wheels, which will be tested in competition with the Fairlie in the Fall. The "Fairlie" is a bogie engine, having two sets of cylinders, and two pairs of connected drivers on each truck; the Baldwin Engine will have a rigid wheel-base with four pairs of connected drivers. The competition will be an exceedingly interesting one—to all interested in Railway Engineering.



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